REMARKS

Applicants have reviewed the nonfinal Office Action of October 5, 2007. Claims 1, 4, 5, 11, 14-16, 18-22, 25, 26, 30, 33, and 34 have been amended. Claims 6-8, 12, 13, 17, 27, 31, and 32 have been cancelled. Claims 1, 2, 4, 5, 11, 14-16, 18-22, 25, 26, 30, 33, and 34 are pending. Reconsideration is requested.

As claims 6-8, 17, and 27 were withdrawn, they have been cancelled by Applicants.

Claims 1-5, 11-16, 18-26, and 30-34 were rejected under 35 U.S.C. 112, first paragraph, as allegedly being indefinite. Applicants traverse the rejection.

According to the Examiner, it was unclear what was meant by a "modified" protein. Applicants have clarified that such a protein contains free sulfhydryl groups. Support can be found beginning at page 10, line 30 of the specification.

In claims 4 and 26, the Examiner questioned how "whey protein" could be considered modified. Applicants have removed the term "whey protein" from calsim 4 and 26.

It was unclear to the Examiner whether claim 5 treated a modified protein or was a procedure for preparing a modified protein. Applicants have amended claim 5 to clarify that it is a procedure for preparing a modified protein.

The Examiner stated that claims 11 and 30 were redundant because it was generally accepted that a film is formed on some kind of surface or substance. Applicants understand this to be a rejection based on 37 CFR 1.75(c), that these claims do not further limit the claim from which they depend. Claims 11 and 30 have been amended to recite specific substances on which the film is formed.

According to the Examiner, it was unclear in claim 20 whether free sulfhydryl groups could be obtained for both "modified" and "unmodified" proteins. Applicants have amended claim 20 to clarify that modified proteins contain free sulfhydryl groups while unmodified proteins contain disulfide bonds. Unmodified proteins do not need free sulfhydryl groups, as the protein network can be formed by interchange reactions, such as those seen in Figure 1. The Examiner also stated that references to "the

protein" and "proteins" were unclear as to which proteins were being referred to. Applicants have removed those terms from claim 20.

Applicants request withdrawal of the indefiniteness rejections.

Claims 1-5, 11-16, 18-26, and 30-34 were rejected under 35 U.S.C. 103(a) as allegedly being obvious over Krochta '164 (U.S. Patent No. 5,543,164) in view of Krochta '628 (U.S. Patent No. 6,869,628) and as evidenced by Shimada, 1989 *J. Agric. Food Chem.* 37:161-168. Applicants traverse the rejection.

Applicants distinguished independent claim 1 on the basis that it required the presence of from about 2 to about 4 free sulfhydryl groups per protein, whereas Krochta '164 suggested remaining thiol groups should be oxidized. In the Final Office Action, the Examiner stated that Krochta '164 did not require the remaining thiol groups to be oxidized. The Examiner also appears to state that as evidenced by Shimada, it would also have been obvious to adjust the number of free sulfhydryl groups to adjust the texture / elasticity of the network.

Applicants' argument appears to be misunderstood. The instant claims require that the final protein network contain from about 2 to about 4 free sulfhydryl groups per protein. In contrast, Applicants submit that Krochta '164 clearly contemplates that all sulfhydryl groups are used up in forming disulfide bonds. This can be seen in column 5, lines 44-53, which emphasize the formation of the disulfide crosslinks. Krochta '628 does not appear to discuss the presence of free sulfhydryl groups at all. This is a quantitative difference in the number of free sulfhydryl groups between the instant claims and the combination of Krochta '164 and Krochta '628.

The free sulfhydryl groups also result in a qualitative difference between the instant claims and the combination of Krochta '164 and Krochta '628. While disulfide crosslinks are present in the instant claims, the free sulfhydryl groups are also important and can act as antioxidants, sequestering metal atoms, and inhibiting the formation of side compounds. See page 13, lines 1-13.

The Examiner's citation of Shimada does not appear to change this analysis. Shimada relates the elasticity of the gel to the number of disulfide bonds, not the

presence of free sulfhydryl groups. In other words, Shimada does not suggest making a protein network containing free sulfhydryl groups.

The Examiner's reasoning might make sense if the cited references suggested beginning with a protein containing sulfhydryl groups and forming a network from the proteins. In such a case, the remaining sulfhydryl groups (which do not form disulfide bonds) might fall within the stated range of claim 1. However, all three cited references begin with a whey protein having disulfide bonds that are then interchanged with each other. No importance is attached to the number of free sulfhydryl groups in the final protein network, and the cited references do not suggest that the number of free sulfhydryl groups in the final protein network is inherently within the claimed range.

Applicants note that Shimada states only that at pH 2.5, the SH groups do not react, and hydrogen bonds are likely the stabilizing force. See page 168. Shimada does not state or suggest the number of SH groups in the gel. In addition, Applicants note that Shimada discusses results in a gel, which is different from the film of the instant claims.

As a result, Applicants submit that claim 1 and its dependent claims are not obvious based on the combination of Krochta '164 and Krochta '628

Applicants distinguished independent claim 20 on the basis that it required the use of sulfite ion forming agent at a pH of 7 or below, and that this pH was only suggested for enzymatic treatment, not chemical treatment. In the Final Office Action, the Examiner stated that it would be reasonable for one of ordinary skill to correlate the chemical treatment conditions with the enzymatic treatment conditions because both conditions are performed for the same intended purpose, thiol-disulfide exchange. The Examiner cited *In re Aller* as stating it was not inventive to discover the optimum or workable ranges by routine experimentation.

In response, Applicants submit that it would not be reasonable to correlate chemical treatment conditions with enzymatic treatment conditions. In particular, the Examiner appears to be suggesting that chemicals and enzymes are equivalents, as in MPEP 2144.06. Applicants agree that both treatments are intended to effect disulfide bond exchange. However, the pH conditions of enzymatic treatment have the purpose

of optimizing the enzymes' reaction rate, with the ultimate result of thiol-disulfide exchange. In contrast, the pH of the chemical treatment does not appear to optimize any rate of the interchange reaction; rather, it prevents the sulfite agent from being retained in the film. See page 9, lines 8-13 of the instant specification. In other words, because the pH is related to the intended path by which the film is formed, Applicants submit that there is no motivation to use the enzymatic treatment conditions for the chemical treatment conditions. This is not a substitution of equivalents, as described in MPEP 2144.06, because enzymes and bisulfites are not equivalents.

As a result, Applicants submit that claim 20 and its dependent claims are not obvious based on the combination of Krochta '164 and Krochta '628

For at least these reasons, Applicants request withdrawal of the § 103(a) rejection based on Krochta '164 and Krochta '628.

Applicants note that the amendments in the independent claims are directed solely towards the indefiniteness rejections, and do not change their scope in any manner. As a result, Applicants submit that the instant amendment may be entered and the claims can be allowed without additional search and examination. The instant amendments could not have been earlier presented because the bases for the indefiniteness rejections were not presented in the nonfinal Office Action. They are necessary to put the application in condition for allowance.

CONCLUSION

For at least the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1, 2, 4, 5, 11, 14-16, 18-22, 25, 26, 30, 33, and 34) are now in condition for allowance.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is hereby authorized to call Jay F. Moldovanyi, at telephone number 216-861-5582, Cleveland, OH.

Respectfully submitted,

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May 21, 2008
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